



State of Ohio Environmental Protection Agency

US EPA RECORDS CENTER REGION 5



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Ohio EPA, DERR, Site Investigation Field Unit (SIFU)**Fax Number: (614) 728-1717**Recipient: Steve Benninger Fax Number: 937-223-6772From: Diane Crosby Phone Number: 614-728-1717RE: Dayton Electroplate workplan**NOTES:**

Please Review and Comment
ASAP. I would like to send
it to Jeanne G. Monday. Thanks

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Diane



Integrated Assessment (IA)

Workplan

for

Dayton Electroplate

STATEMENT OF PURPOSE: The purpose of this IA is to evaluate potential environmental hazards associated with the Dayton Electroplate facility located in Dayton, Ohio. Data collected will be used to demonstrate whether or not this site is a likely candidate for the National Priority List (NPL).

I. GENERAL INFORMATION

Expected date of IA: April 10-11, 1997

County: Montgomery

USEPA ID: None assigned

A562

Ohio ID: None assigned

Site Location: 1030 Valley Street, Dayton, Ohio

Latitude: 39 46 48 North

Longitude: 84 09 48 West

Ohio EPA District Site Coordinator: Jon R. Watterworth (SWDO)

Ohio EPA SIFU Environmental Specialist : Diane L. Crosby

U.S.G.S. Map Info (quadrant) Dayton North

Ohio Priority:

Access Permitted: Yes (USEPA)

Utility Clearance: Yes (USEPA)

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Sample Summary:

- Total number of soil sample locations: 16 samples, 1 background and 1 duplicate.
- Total number of groundwater locations: 4 samples.

Directions to site from Ohio EPA Central Office:

From 1600 Watermark take I-70 West to State Route 4 South. Then take Ohio Route 4 to the Stanley Avenue/Findley Street exit and turn north. Turn left at the first stop light onto Valley Street. Dayton Electroplate is on the left past the used car lot.

II. SITE DESCRIPTION:

The Dayton Electroplate(DE) site("site") is located at 1030 Valley Street, Dayton, Ohio (Figure 1). The site is slightly west of the intersection of Valley Street and Stanley avenue, and borders Ohio Route 4 to the south. The Mad River borders Ohio Route 4 to the east.

The site is an industrial/commercial facility on a ⁴two-acre parcel of land within the northeast portion of the City of Dayton (Lat. 39 46 48 Long. 84 09 48). The site was historically used for coating metals with rustproofing materials by an electroplating process. The electroplating operations were housed in two buildings totalling approximately 60,000 square feet, and consisted of four separate plating lines. The two buildings also contained drum storage areas, office space, manufacturing and water treatment areas, and process tanks. The area around the buildings consists of paved and unpaved parking areas bounded by a locked chain-link fence (Figure 2). The site is closed and a USEPA removal action is presently underway.

One of the primary points of concern is the pollution potential to ground water. The ground water at the DE site can be readily contaminated by surface or subsurface releases. The site exhibits a combination of critical factors such as shallow depth-to-ground water, a highly permeable sand and gravel aquifer, and moderately permeable overlying soil material. The site overlies part of an extensive and important regional aquifer which is used for drinking, industrial, and agricultural water supplies.

Several industrial sites which are known to have impacted ground water are in the area. The Valley Crest Landfill, Van Dyne Crotty, and the Brandt Street Terminals are all less than one mile upgradient.

III. SITE HISTORY AND OPERATIONS

In 1924 the site began industrial operations as the Dayton Rustproofing Company. From 1980 to 1984 hazardous waste generation was documented (OEPA, DHWM). On June 1, 1984 the present owner, Charles Borum, took control of the site under the name; Dayton Electroplate.

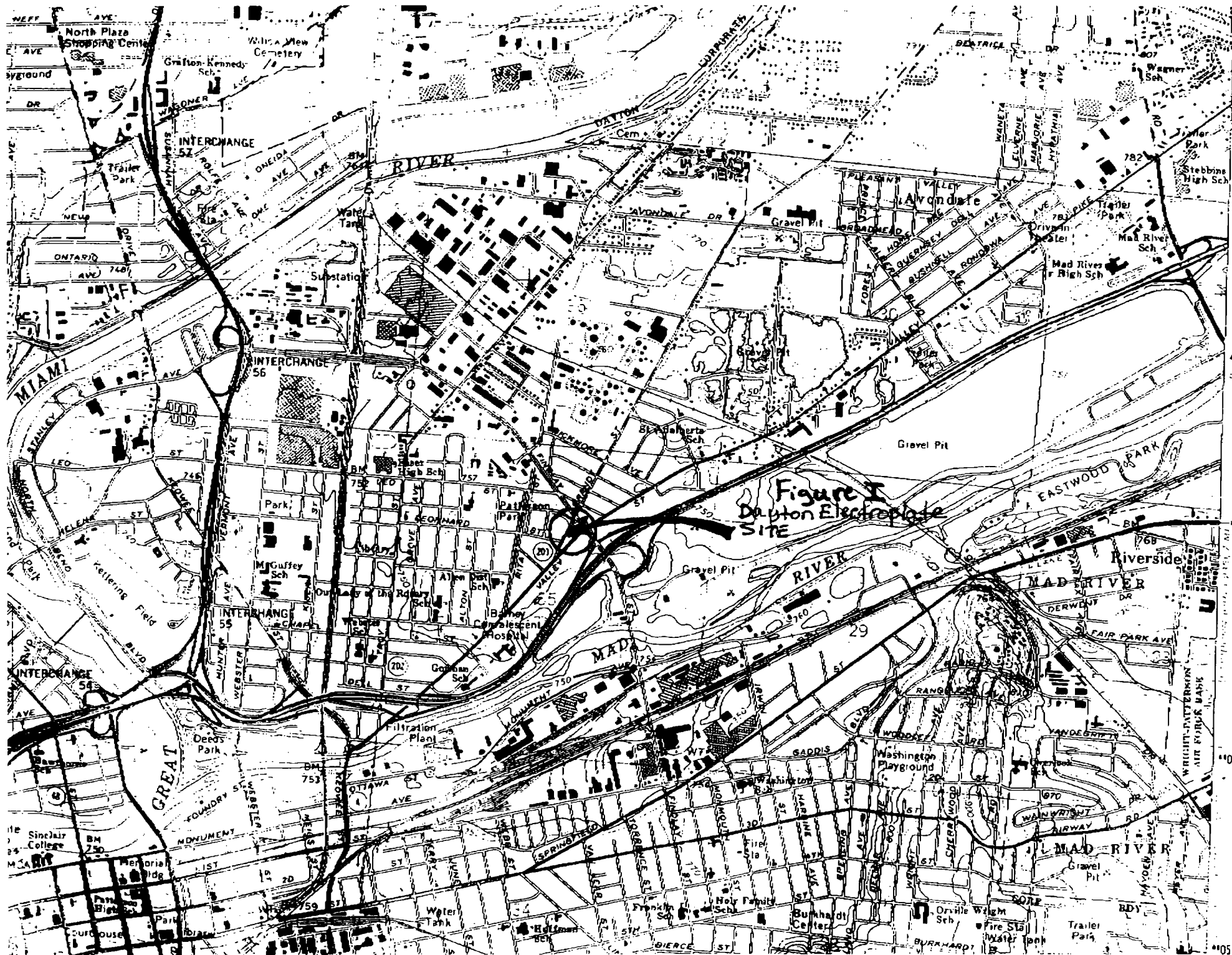


Figure 1
Dayton Electric Plant
SITE

N
47°30'
4408
4106
4105

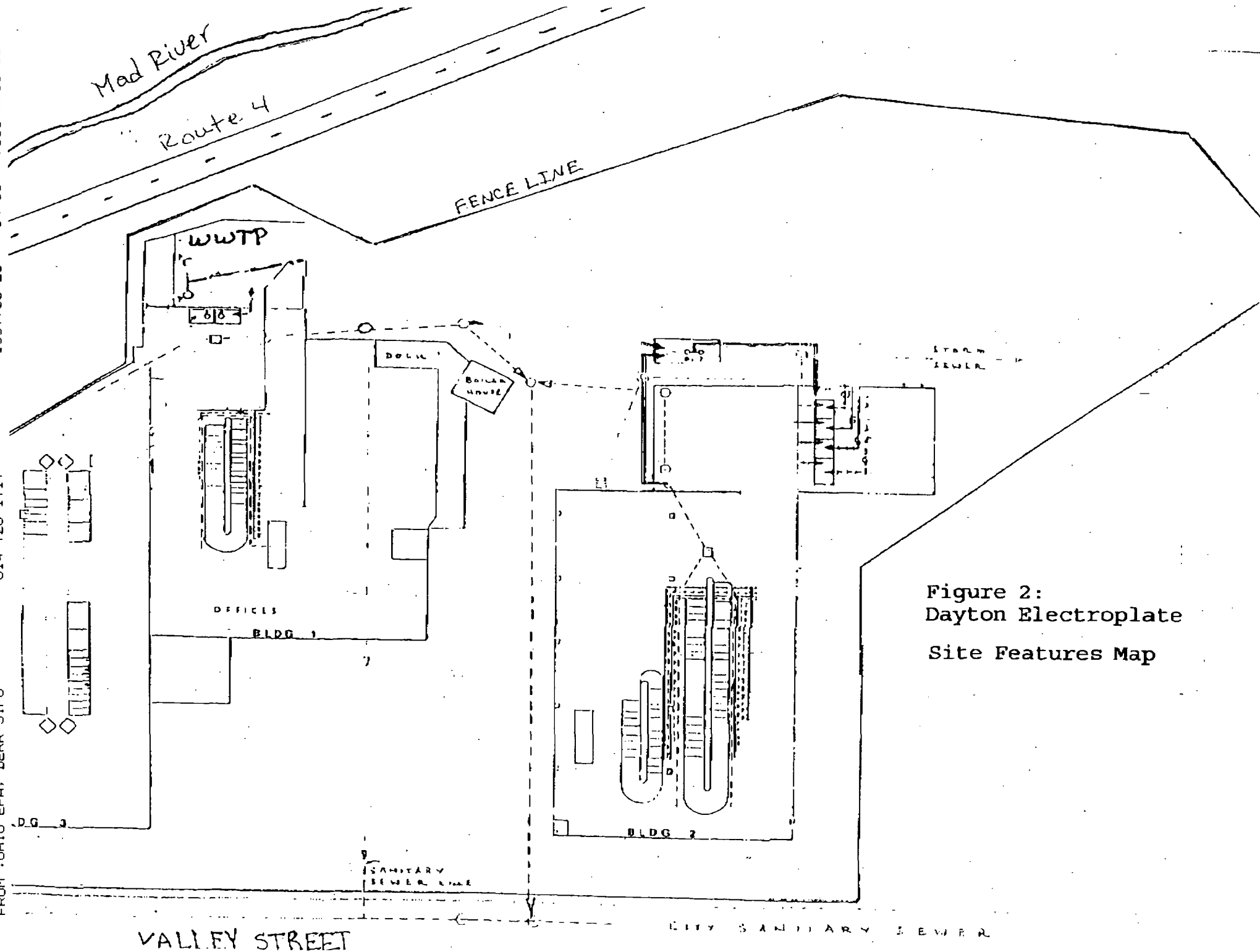


Figure 2:
Dayton Electroplate
Site Features Map

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Dayton electroplating operations included nickel, chrome, zinc, and clear coatings from June 1984 to June 1988. A complaint was filed with OEPA, alleging that DE had been illegally storing hazardous wastes in a trailer on-site and had been disposing of untreated plating wastes into the City of Dayton sanitary sewer. On June 30, 1988 OEPA conducted an investigation of the complaint and the complaint allegations were not confirmed but did reveal numerous violations of state and federal hazardous waste laws and regulations. Subsequent inspections revealed that DE had established a hazardous waste facility without obtaining a hazardous waste facility permit and had engaged in illegal storage of listed wastes.

On September 20, 1990, An OEPA inspection found that DE could not document LDR notifications. Another OEPA RCRA inspection conducted April 1, 1991, revealed that a roll-off box containing F006 hazardous waste (Ohio EPA RCRA Files) had been punctured to allow a release onto the ground at the rear of the site.

On August 8, 1991 DE was referred to the Environmental Enforcement Section of the Attorney General's Office (AGO) for violation of civil enforcement of state hazardous waste laws.

On June 26, 1992, USEPA issued a Notice of Violation (NOV) to DE. No response was received. OEPA conducted a follow-up inspection on April 16, 1993 and noted that DE did not initiate a closure plan for illegal storage units including drum storage and roll-off box areas.

A second NOV was issued by USEPA to DE August 3, 1993. DE again did not respond.

On November 26, 1993, a 104E information request letter was sent to DE by USEPA.

On February 14, 1994, OEPA through the AGO filed a complaint for relief and civil penalty against DE including 11 counts of hazardous waste storage violations and failure to submit a closure plan. July 6, 1994, USEPA issued a Complaint, Findings of Violations, and Compliance Order to DE for RCRA violations.

Charles Borum, President, DE, signed a consent order May 4, 1995 with the State of Ohio, to perform a closure of all hazardous waste units at the site. The State presented Charges in Contempt against DE November 15, 1995. Later, a contempt order was signed by Mr. Borum for failure to comply with the May 4, 1995 consent order. In April 1996, DE ceased all operations prior to petitioning for Chapter 7 bankruptcy.

OEPA inspected the abandoned site August 28, 1996 and observed acid vapor collecting near the ceiling of plating area #1 (Figure 2) and a strong acidic odor permeating the building. On September 12, 1996, OEPA DHWM, requested assistance from USEPA Region V, Emergency Response to conduct a removal action at the abandoned DE site due to substantial endangerment to both the local population and the environment.

On October 11, 1996, Mark Boden of the Ohio EPA Cessation of Regulated Operations (CRO) program, performed a compliance site inspection and noted violations to CRO rules. Steve Renninger, USEPA On-Scene Coordinator, and members of the Superfund Technical Assessment and Response Team (START), also inspected the site. Approximately 110 full to partially full

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plating vats, roll-off boxes, and miscellaneous waste tanks containing spent electroplating solutions totalling approximately 105,000 gallons were identified. Approximately 250 55-gallon drums and numerous smaller containers of plating solutions, plating wastes, oxidizers, corrosives, flammables, reactives and unknowns were observed throughout the site with some stacked two to three high. During this inspection the START contractor collected drum and plating vat samples later documented to contain acids and bases and cyanide. Many incompatible solutions were stored in close proximity.

The DE facility was broken into and vandalized December 1996 and on January 3, 1997, site security was initiated.

On January 9, 1997 START initiated sampling and documentation of all wastes on-site. February 14, 1997 to present, hazardous wastes and demolition debris began to be taken off-site for disposal.

SITE GEOLOGY & HYDROLOGY

Soils

According to the Montgomery County Soil Survey, soil from the Fox Series originally covered the site. These soils have been disturbed or buried in much of the area. The Fox Series consists of a dark yellowish-brown silt loam plow layer about eight inches thick. The subsoil consists of layers of mainly brown loam, and a reddish-brown and brown sandy clay loam. It extends to a depth of 29 inches where calcareous sand and gravel occur. Permeability is moderate in the subsoil and is high in the sandy and gravelly substratum.

Geology/Hydrogeology

Montgomery County is covered with extensive deposits of Illinoian and Wisconsinan glacial deposits. The DE site is located on outwash valley train deposits overlain by modern river alluvium. The site is just north of the Mad River at an elevation of approximately 755 feet above sea level. The site lies in a relatively low area within two miles of the confluence of the Stillwater, Mad and Great Miami Rivers. The site appears relatively flat and lies within the original floodplain of the Mad River. The remnants of gravel mining operations lie along the Mad River. The City of Dayton operates a well field southeast of the site.

The DE site is located on sand and gravel outwash deposits of Wisconsinan age. These deposits range in thickness from zero feet at the edge of the bedrock valley to a maximum of 230 feet in the center of the river valley. The unconsolidated materials are coarse sand and gravel with interbedded layers of light brown and light gray, clayey and silty tills. Overlying the glacial sediments is a thin veneer of recent alluvial deposits. Three geologic units are defined in the area: a shallow aquifer, a low permeability aquitard, and a deep aquifer. The Ordovician Richmond Shale formation underlies the glacial deposits and composes the nearby bedrock hills. The Richmond Shale is composed of relatively soft, light gray, calcareous

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shale with inter-bedded layers of limestone.

The Ground Water Resources map of Montgomery County shows Dayton Electroplating to be located near the edge of an area where yields in excess of 1000 gallons per minute may be developed from 85 to 185 feet. Montgomery County's Mad River well field lies just south of the site. Wells #48 and #49 are approximately 2500 feet to the south of the site. Ground water use in this area is critical and its use is extensive. The site overlies a Class 1 sole source aquifer.

Ground water is found in both glacial unconsolidated aquifers and Silurian bedrock aquifers in Montgomery County. The Ordovician shaley limestone yields little water and is generally considered a non water-bearing unit. The glacial aquifers are found in an extensive network of buried valleys. Permeable sand and gravel deposits beneath the floodplains of the Great Miami River, Stillwater River, and Mad River may yield industrial and municipal supplies at depths ranging from 55 to 185 feet. The ground water flow direction near the DE site is down valley (from northeast to southwest) in both the shallow and deep aquifers.

The regional recharge area consists of the entire surface of the buried valley (i.e. the area between the valley's bedrock walls). The Mad River is the primary source of recharge water to the well field. Recharge occurs from leakage through the bottom of the Mad River itself, nearby lakes, and artificial recharge lagoons on Rohrer's Island. All unpaved areas near the site contribute some recharge to the underlying aquifer as does ground water flow from the upland areas.

Pollution Potential

The Ground Water Pollution Potential map of Montgomery County shows the DE site to be located in an area with a Pollution Potential Index over 200. Within Montgomery County, the Pollution Potential Index ranges from approximately 41 to 206. The pollution potential maps are based on a weighted rating system which considers depth to water, net recharge, aquifer media, soil media, topography, impact of the vadose zone media, and the hydraulic conductivity of the aquifer.

The DE site is located within a buried valley hydrogeologic setting. The depth to water is expected to be 5 to 15 feet. The soil media is likely sand or loam with over 10 inches of water per year recharging the aquifer. The land surface is nearly level (0-2% slope). The underlying aquifer material is composed of sand and gravel with a hydraulic conductivity of over 2000 GPD/FT².

Therefore, the pollution potential maps indicate the DE site is located on land which is some of the most likely in Montgomery County to allow pollution to reach ground water.

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FIELD WORK SUMMARY

To fully determine the extent of the impact of electroplating wastes that are suspected of being dumped down the facilities sewer systems and upon onsite soils, sampling will be conducted. An estimated twenty (20) samples in two matrices will be collected at and around the DE site (approximate sample locations - Figure 3). This number does not include duplicates, backgrounds or trip blanks. Samples will be collected in conjunction with the removal action currently taking place. Samples will be sent to CLP program labs and a lab contracted by the USEPA START.

Soil

Up to sixteen (16) soil grab samples will be collected on-site (Figure 3) to evaluate if soil contaminants are present and if so, do they warrant additional removal action by the USEPA Emergency Response Program. Soil samples will be collected using hand held bucket augers and/or DERR-SIFU's Geoprobe. A total of five (5) soil samples from the sixteen (16) proposed removal action soil sample locations, will be submitted for full TAL/TCL analysis by the CLP program.

Samples will be collected to verify and/or confirm the extent of contamination in the soil at the rear of the facility around the loading dock and the facilities WWTP. It is suspected that electroplating wastes were disposed of down the facilities sewer system and on onsite soils as evidenced by degraded sewer lines beneath manholes in the loading dock area (City of Dayton Water and Sewer Division). Other soil samples will be placed throughout the rear of the facility to determine the extent of contamination around building 2. One or two grab samples will be collected in a grassy area near the loading docks of building 3 and the front porch area of building 1 (Figure 3).

Groundwater

Up to four (4) groundwater samples will be collected. The samples will be collected using DERR-SIFU's Geoprobe groundwater sampler and concentrated at the rear of the site and around the manholes. These samples will be analyzed for TCL/TAL and submitted for CLP analysis. Data from these samples will be evaluated as initial screening to justify additional groundwater evaluation if warranted.

INVESTIGATION DERIVED WASTE PLAN

Investigation-derived wastes (IDW) will generally consist of disposable vinyl and nitrile gloves, latex boot covers and detergent water. These items are used primarily for prevention of cross-contamination and for sanitary considerations during sampling activities.

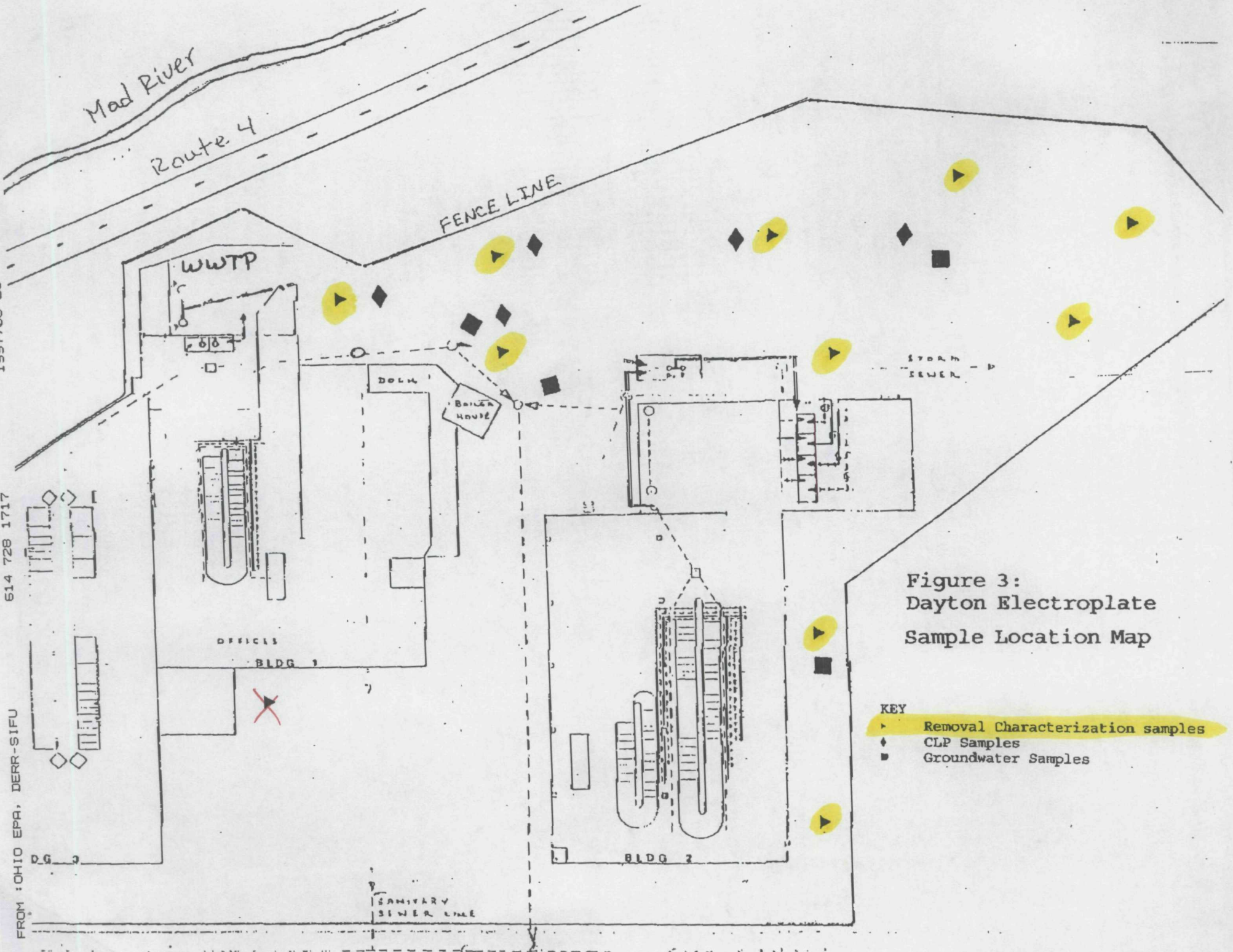


Figure 3:
Dayton Electroplate
Sample Location Map

- KEY
- ▶ Removal Characterization samples
 - ◆ CLP Samples
 - Groundwater Samples

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Any investigation-derived wastes generated during the sampling event will be disposed of by USEPA with IDW from the removal action.

(If, in the best professional judgement of the site coordinator, investigation-derived wastes can be rendered non-hazardous, the wastes will be double-bagged and deposited in an industrial dumpster on site or transported back to the OhioEPA Field Facility in Columbus, Ohio for disposal as directed in the Investigation-Derived Waste Management Guidance Manual (USEPA/540G-91/009, May 1991).

Should contact with concentrated wastes occur, disposable gear and wastewater will be secured in a steel drum, on site if possible, until sample analysis results are received. If analytical data reveals significant contamination, as determined by the site coordinator, these wastes will be disposed of properly by a contracted, licensed hauling and disposal facility.)

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References

1. Ohio EPA Division of Hazardous Waste Management (DHWM)
2. Ohio EPA Division of Drinking and Ground Water (DAGW)
3. City of Dayton Water and Sewer Division
4. Montgomery County Pollution Potential Map